First Day Materials	*CCE4237_Spring_ 2015*

Course No.: *CCE4237*

Course Title: Control and Instrumentation In Industrial Processes (4+2)

Course Hours: 4 Hr lecture + 2 Hr tutorial

Class Schedule:

(**4X 50-minutes lectures and 2X50-minutes tutorial session per week)**

Term: Spring 2015

Prerequisite: All Supported CCE Course levels up to Fall 2014.

Course Instructor: Prof.Dr. Mohamed Talaat Faheeem Saidahmed

Textbooks:

William C. Dunn, **" Fundamentals of Industrial Instrumentation and Process Control "** McGraw-Hili, 2005.

References:

1. Wayne Bequette," **Process Control: Modeling, Design and Simulation**, " 2nd Edition, Prentice Hall, Upper Saddle River, NJ (2003).
2. Brian Roffel & Ben Betlem, "**Process Dynamics and Control Modeling for Control and Prediction ,**" 2nd Edition, John Wiley & Sons Ltd, 13: 978-0-470-01663-3.
3. A. Creery, P.Eng. P.E. & E. J. Byres, P.Eng., " **Industrial Cybersecurity for Power System and Scada Networks**", Copyright Material IEEE , Paper No. PCIC-2005-DV45.
4. Albert Paul Malvino & Jerald A. Brown, "**Digital Computer Electronics**",3rd Edition, McGraw-Hill,ISBN 0-02-800594-5

Calendar Description:

Types of industrial processes – Modeling and simulation of industrial processes – Digital instrumentation – Smart sensors – Digital signal conditioning – Computer interfacing for data acquisition – Distributed digital control systems – Applications of microcontrollers – Software design – Supervisory control and data acquisition (SCADA) system – Examples for computer control systems design in industrial processes.

Course Outline:

Serial	Topics	No. of weeks
1)	Types of industrial processes	1
2)	Modeling and simulation of industrial processes & Digital instrumentation.	4
3)	Smart sensors , Digital signal conditioning, and Computer interfacing for data acquisition.	3
4)	Distributed digital control systems , Applications of microcontrollers , and Software design.	3
5)	Supervisory control and data acquisition (SCADA) system.	2
6)	Examples for computer control systems design in industrial processes.	2

Grading System:

Term Work (Class performance : Attendance, participation, assignments, small projects , and reports)	**20%**
Quizzes	**10%**
Mid-term	**30%**
Final exam	**90%**

General Rules:

1- Home work assignments will be collected before the class on the date it is due.
2- Discussion between students on homework assignments is acceptable. However, each student is expected to perform his own work when attempting the assigned problem. Students are expected to maintain exemplary ethical standards.
3- Generally, Make up examinations will not be given.
4- For absence the student should produce official written documentation of an acceptable reason for excused absences.